

IN THE CLAIMS:

1. (Currently Amended) Method ~~for configuring a radio uplink (136) from user equipment (160) to a network element (132)~~, comprising the steps of:

    sending ~~an information element~~ information having a cell specific parameter, a radio link specific parameter, or both in one or more messages on an interface ~~(133, 134)~~ between ~~the network~~ a network element and a radio network controller ~~(130)~~ for said configuring ~~the radio~~ a radio uplink,

    configuring the radio uplink at the network element ~~after signalling between the network element and the user equipment~~, and

    sending a payload packet from ~~the user~~ user equipment to the network element over the radio uplink after the uplink is configured at the network element for sending the payload packet to the radio network controller.

2. (Currently Amended) The method of claim 1, further comprising ~~the steps of~~:

    acknowledging correct reception of the payload packet at the network element on a radio downlink from the network element to the user equipment, and

    sending the payload packet from the network element to the radio network controller following said correct reception from the user equipment.

3. (Currently Amended) The method of claim 1, further comprising ~~the step of~~ sending the information ~~element~~ on an interface ~~(140, 150)~~ between the radio network controller ~~(130)~~ and another radio network controller ~~(100)~~ for relay to another network element ~~(110)~~ for configuring an uplink between the other network element and the user equipment.

4. (Currently Amended) A mobile telecommunications system, comprising:

a network element (132) and

a radio network controller (130) connected by a signalling interface (133,134) ~~for configuring~~ arranged to configure a radio uplink (136) from a user equipment (160) to the network element (132), the interface ~~for conveying~~ being configured to convey messages having information elements containing parameters ~~characterized in that~~

~~an information element~~ wherein information having a cell specific parameter, a radio link specific parameter, or both is ~~conveyed~~ conveyable in one or more messages on the interface (133,134) between the network element (132) and the radio network controller (130) for said configuring the radio uplink at the network element ~~after signalling between the network element and the user equipment~~, and that

wherein a payload packet is sent from the user equipment to the network element over the radio uplink after the uplink is configured at the ~~network element~~ user equipment for sending the payload packet to the radio network controller.

5. (Currently Amended) The system of claim 4, further characterized in that

reception of the payload packet is acknowledged by the network element on a radio downlink (135) from the network element to the user equipment, and that

the payload packet is sent from the network element to the radio network controller following reception from the user equipment.

6. (Currently Amended) The system of claim 5, further characterized in that the information element is sent on an interface (140,150) between the radio network controller (130) and another radio network controller (100) for relay to another network element 110.

7. (Currently Amended) A data structure ~~for at least temporary storage~~ configured to at least be temporarily stored in a computer readable medium, the data structure comprising ~~an information element~~ information having a cell specific parameter, a radio link specific parameter, or both ~~for transfer~~ , transferrable in one or more messages on an interface (133, 134; 120, 122) between a network element (132; 110) and a radio network controller (130; 100) ~~for configuring~~ so as to configure a radio uplink from a user equipment (160) to the network element (132; 110) wherein said configuring ~~is carried out~~ performable at the network element ~~for enabling~~ so as to enable transmission of a payload packet from the user equipment to the network element over the radio uplink and from there to the radio network controller.

8. (Original) The data structure of claim 7, characterized in that transmission of the payload packet from the user equipment to the network element is followed by acknowledgement of correct reception of the payload packet by the network element on a radio downlink from the network element to the user equipment and transmission of the payload packet from the network element to the radio network controller.

9. (Currently Amended) Radio network controller (130) ~~for configuring a radio uplink (136) from user equipment (160) to a network element (132)~~, comprising:

a first interface (133,134) ~~for communicating an information element arranged to communicate information~~ having a cell specific parameter, a radio link specific parameter, or both in one or more messages on the first interface (133,134) between the ~~network~~ a network element (132) and the radio network controller (130) ~~for said configuring the so as to configure a radio uplink; and~~

a second interface (140,150) ~~for communicating arranged to communicate the information element having a cell specific parameter, a radio link specific parameter, or both in the one or more messages on the second interface (140,150) between the radio network controller (130) and a second radio network controller (100) connected (120,122) to a second network element (110), wherein the information element having a cell specific parameter, a radio link specific parameter, or both in one or more messages is usable to configure for configuring a second radio uplink (180) between the second network element (110) and the user user equipment (160), the first radio network controller (130) for receiving being configured to receive a payload packet from the network element (132) over the first interface (133,134), the second radio network controller (100) for receiving being configured to receive the payload packet from the second network element (110) after receipt by the second network element (110) from the user equipment over the second radio uplink (180), and the second network element (100) for sending being configured to send the payload packet received from the second network element (110) to the radio network controller (130) following the reception by the second network element from the user equipment (160) for so as to transfer from the second network controller (100) to the first network controller (130).~~

10. (Currently Amended) Network element ~~(132; 110)~~ ~~for receiving an uplink channel on a radio link (136; 180) from user equipment (160) to the network element~~, comprising:

a non-radio interface ~~(133, 134; 120, 122)~~ ~~for communicating an information element arranged to communicate information~~ having a cell specific parameter, a radio link specific parameter, or both in one or more messages between the network element and a radio network controller ~~(130; 100)~~ ~~for configuring the~~ so as to configure an uplink channel on ~~[[the]]~~ a radio link; and

a radio interface ~~for communicating signalling relating~~ arranged to communicate signalling related to said configuring the uplink channel between the network element and ~~[[the]]~~ user equipment and ~~for receiving~~ arranged to receive a payload packet from the user equipment to the network element over the radio uplink after the configuring the uplink channel on the radio link is carried out by the network element,

wherein the non-radio interface ~~(133, 134; 120, 122)~~ is ~~for conveying~~ also arranged to convey the payload packet from the network element to the radio network controller ~~(130; 100)~~ following the reception by the network element ~~(132; 110)~~ from the user equipment ~~(160)~~.

11. (Currently Amended) User equipment (160) ~~for communicating packets on an enhanced uplink from (136,180) from the user equipment to a network element (132, 110), the user equipment having comprising:~~

a transmitter (192) and

a receiver (190),

wherein the transmitter and the receiver are together connected to an antenna for transmitting and receiving that is arranged to transmit and receive signals over a radio interface between the user equipment and [[the]] a network element wherein the user equipment also includes comprises:

a control (194) ~~for processing~~ arranged to process signalling between the network element and the user equipment ~~for configuring so as to configure~~ a radio uplink (136) from the user equipment (160) to [[a]] the network element (132),

wherein sent information has an information element is sent having a cell specific parameter, a radio link specific parameter, or both in one or more messages on an interface (133, 134) between the network element and a radio network controller (130) for the said configuring the radio uplink,

wherein the radio uplink is configured at the network element, the user equipment, or both, after signalling between the network element and the user equipment, and

wherein a payload packet is [[sent]] sendable from the user equipment to the network element over the radio uplink after the uplink is configured configured, and then sent from the network element to the radio network controller.

12. (Currently Amended) A data structure ~~for at least temporary storage in a computer readable medium, the data structure~~ comprising  
an ~~information element~~ information having a cell specific parameter, a radio link specific parameter, or both ~~for transfer~~ wherein the information is transferrable in one or more messages on an interface (136,138; 170,180) between a network element (132; 110) and a user equipment (160) ~~for configuring~~ so as to configure a radio uplink from the user equipment to the network element (132; 110) wherein said configuring is ~~carried out~~ performable at the network element, ~~the user equipment, or both, for enabling~~ so as to enable transmission of a payload packet from the user equipment to the network element over the radio uplink and from there to ~~[[the]]~~ a radio network controller.

13. (Original) The data structure of claim 12, characterized in that transmission of the payload packet from the user equipment to the network element is followed by acknowledgement of correct reception of the payload packet by the network element on a radio downlink from the network element to the user equipment and transmission of the payload packet from the network element to the radio network controller.

14. (New) The method of claim 3, wherein said configuring the uplink between the other network element and the user equipment comprises the steps of configuring the uplink between the other network element and the user equipment followed by sending the payload packet from the user equipment to the other network element over the radio uplink between the user equipment and the other network element for sending the payload packet to the radio network controller.

15. (New) The method of claim 14, further comprising the steps of:  
acknowledging correct reception of the payload packet at the network element on a radio downlink from the network element to the user equipment, and  
acknowledging correct reception of the payload packet at the other network element on a radio downlink from the other network element to the user equipment.

16. (New) The method of claim 1 wherein prior to said step of sending said information element on said interface between said network element and said radio network controller, said radio network controller decides a value for said cell specific parameter or said radio link specific parameter, or both, for said sending said information element with said cell specific parameter and said radio link specific parameter in said one or more messages on said interface from said radio network controller to said network element.

17. (New) The method of claim 1, wherein said step of sending by said radio network controller includes sending at least one parameter to said network element indicative of boundaries within which choices may be made by said network element.

18. (New) The method of claim 1, wherein said radio network controller is responsive to signaling from said network element with a proposed value or values for said cell specific parameter, said radio link specific parameter, or both, and said radio network controller carries out said step of sending said information element either confirming or changing said proposed value or values.

19. (New) The mobile telecommunications system of claim 4, wherein said configuring the uplink between the other network element and the user equipment comprises configuring the uplink between the other network element and the user equipment followed by sending the payload packet from the user equipment to the other network element over the radio uplink between the user equipment and the other network element for sending the payload packet to the radio network controller.



20. (New) The mobile telecommunications system of claim 19, further characterized in that correct reception of the payload packet at the network element is acknowledged on a radio downlink from the network element to the user equipment, and correct reception of the payload packet at the other network element is acknowledged on a radio downlink from the other network element to the user equipment.

21. (New) The mobile telecommunications system of claim 4, wherein the radio network controller decides a value for said cell specific parameter or said radio link specific parameter, or both, prior to said information element being conveyed on said interface between the network element and the radio network controller.

22. (New) The mobile telecommunications system of claim 4, characterized in that said radio network controller is arranged to send at least one parameter to the network element indicative of boundaries within which choices may be made by said network element for said configuring said radio uplink.

23. (New) The mobile telecommunications system of claim 4, characterized in that said radio network controller is responsive to signaling from said network element with a proposed value or values for said cell specific parameter, said radio link parameter, or both, and said radio network controller conveys said one or more messages either confirming or changing said proposed value or values.

24. (New) The data structure of claim 7, characterized in that said cell specific parameter of said information element is included in a cell setup request message, a cell reconfiguration request message, a common transport channel setup message, a common transport channel reconfiguration request message, a physical channel reconfiguration request message or a new message defined from the radio network controller to the network element.

25. (New) The data structure of claim 24, wherein said information element comprises a parameter defining total allowable interference due to radio uplink users wherein a scheduler of said network element is not allowed to allow a sum of uplink user noise rise to exceed said parameter.
26. (New) The data structure of claim 7, wherein said information defines a target of a total uplink load of a cell for use by said network element in scheduling so as to optimize capacity in a cell.
27. (New) The data structure of claim 7, wherein said information is included in a radio link setup request message, a radio link reconfiguration prepare message, a radio link reconfiguration request message, or a new message defined for uplink parameter delivery.
28. (New) The data structure of claim 27, wherein parameters from the network element to the radio network controller can be added in a radio link setup response message, a radio link reconfiguration ready message, a radio link reconfiguration response message or a new message defined for parameter delivery from the network element to the radio network controller.
29. (New) The data structure of claim 27, wherein said information includes a network element TFCI threshold setting a maximum data rate TFC a scheduler of the network element is allowed to grant the user equipment wherein said information is for transfer from the radio network controller to the network element.

30. (New) The data structure of claim 27, wherein said information comprises a user equipment TFCI threshold for setting a maximum data rate TFC the user equipment is allowed to use wherein said information is for transfer from the radio network controller to the network element and which information is for use by a scheduler of the network element for adjusting said parameter independently and signaling it to the user equipment within limits set by the network element TFCI threshold.

31. (New) The data structure of claim 27, characterized by an acknowledgement power offset information element for transfer from the radio network controller to the network element for use by the network element in setting a power of hybrid ARQ acknowledgement information transmission to the user equipment.

32. (New) The data structure of claim 27, characterized by said information comprising an acknowledgement repetition factor assigned by the radio network controller for defining how many times a hybrid ARQ is repeated.

33. (New) The data structure of claim 27, characterized in that said information comprises a rate grant power offset information element for transfer from the radio network controller to the network element for use by the network element in setting power of scheduling related downlink signaling.

34. (New) The data structure of claim 27, characterized by said information comprising a rate grant repetition factor information element assigned by the radio network controller to the network element defining how many times scheduled related downlink signaling is repeated.

35. (New) The data structure of claim 27, characterized by said information comprising a rate request power offset for transfer from the radio network controller to the network element for use by the network element in evaluating power offset applied by the user equipment to uplink related scheduling signaling.

36. (New) The data structure of claim 27, characterized in that said information comprises a rate request repetition factor information element assigned by the radio network controller to the network element for use by the network element when it receives rate request information from the user equipment for defining how many times scheduling related uplink signaling is repeated.

37. (New) The data structure of claim 27, characterized in that said information comprises a user equipment threshold Dtx information element assigned by the radio network controller to the network element so that a scheduler of said network element will lower a said UETFCI threshold to a value of said user equipment threshold Dtx after said user equipment has been inactive for a set period.

38. (New) The data structure of claim 37, characterized by said information comprising a user equipment threshold Dtx delay information element assigned by the radio network controller to the network element for defining an inactivity period after which the user equipment should set the user equipment TFCI threshold to equal the user equipment threshold Dtx after entering into DTX mode.

39. (New) The data structure of claim 27, characterized in that said information comprises a delay due to user equipment Ptx power information element defining a period in which the user equipment is not using a maximum bit rate due to a user equipment Ptx power limitation.

40. (New) The data structure of claim 27, characterized by said information comprising a TrCH under Node B control information element indicating transport channels which are under scheduling control of said network element for use by said network element for scheduling purposes.
41. (New) The data structure of claim 40, characterized by said network element able to control some TrCHs in a Coded Composite Transport Channel (CCTrCH) with a number of transport channels (TrCH) combined to it.
42. (New) The data structure of claim 27, characterized by said information comprising a user equipment capabilities information or user equipment category information i.e., provided from the radio network controller to the network element for providing information related to user equipment capabilities for an enhanced dedicated channel or alternatively the user equipment capabilities may be categorized and the user equipment category parameter can be signaled to the network element.
43. (New) The data structure of claim 42, characterized by said information comprising an HARQ memory partitioning information element for providing information for HARQ memory usage.
44. (New) The data structure of claim 7, characterized by said information providing a transmission delay that the user equipment has to expect before it is allowed to ask for a higher data rate or RLC buffer size or RLC window size.
45. (New) The data structure of claim 7, characterized by said information comprising QoS parameter to assist the network element in scheduling which user equipments have priority for data rates, traffic class, and other parameters relating to QoS.

46. (New) The method of claim 1, wherein the information has both a cell specific parameter and a radio link specific parameter in the messages respectively.
47. (New) The network element of claim 10, further comprising:  
wherein the network element is further arranged to acknowledge correct reception of the payload packet at the network element, on a radio downlink from the network element to the user equipment, and  
wherein the network element is further arranged to send the payload packet from the network element to the radio network controller following said correct reception from the user equipment.
48. (New) Network element, comprising:  
first means for communicating information having a cell specific parameter, a radio link specific parameter, or both in one or more messages between the network element and a radio network controller so as to configure an uplink channel on a radio link; and  
second means for communicating signalling related to said configuring the uplink channel between the network element and user equipment, and for receiving a payload packet from the user equipment to the network element over the radio uplink after the configuring the uplink channel on the radio link is carried out by the network element,  
wherein the first means is also for conveying the payload packet from the network element to the radio network controller following the reception by the network element from the user equipment.
49. (New) The network element of claim 48, further comprising:  
means for acknowledging correct reception of the payload packet at the network element, on a radio downlink from the network element to the user equipment, and  
means for sending the payload packet from the network element to the radio network controller following said correct reception from the user equipment.